

WHAT IS CLAIMED IS:

1. A semiconductor integrated circuit comprising:
 - a clock non-synchronous type circuit for performing data read operation on the basis of a read control signal and outputting read data from a data output node asynchronously with a clock signal;
 - a clock synchronous type circuit for receiving the read data through a data input node in synchronism with the clock signal;
- 10 data storage circuits connected in parallel between the data output node and the data input node;
- a first transfer timing determining circuit for selecting one of said data storage circuits and transferring the read data output from said clock non-synchronous type circuit to said selected one data storage circuit, said first transfer timing determining circuit transferring the read data on the basis of a first control signal representing that the read data is output from said clock non-synchronous type circuit;
- 15 and
 - a second transfer timing determining circuit for selecting one of said data storage circuits and transferring the read data stored in said selected one data storage circuit to said clock synchronous type circuit, said second transfer timing determining circuit transferring the read data on the basis of a second control signal synchronous with the clock signal.
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2. A circuit according to claim 1, wherein each
of said data storage circuits comprises a latch circuit
for latching the read data, a first switching circuit
connected between the data output node and said latch
circuit, and a second switching circuit connected
5 between the said latch circuit and the data input node.

3. A circuit according to claim 2, wherein said
first transfer timing determining circuit controls said
switching circuit, and said second transfer timing
10 determining circuit controls said second switching
circuit.

4. A circuit according to claim 1, wherein each
of said data storage circuits comprises first and
second latch circuits having a switching function and
15 connected in series between the data output node and
the data input node.

5. A circuit according to claim 4, wherein said
first transfer timing determining circuit controls said
first latch circuit, and said second transfer timing
determining circuit controls said second latch circuit.
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6. A circuit according to claim 1, wherein each
of said data storage circuits comprises first and
second flip-flop circuits connected in series between
the data output node and the data input node.

25 7. A circuit according to claim 6, wherein said
first transfer timing determining circuit controls said
first flip-flop circuit, and said second transfer

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timing determining circuit controls said second flip-flop circuit.

8. A circuit according to claim 1, wherein the first control signal is output from said clock
5 non-synchronous type circuit and asynchronous with the clock signal.

9. A circuit according to claim 1, wherein the first control signal is generated on the basis of the read control signal, and is output from said clock
10 non-synchronous type circuit after a lapse of a delay time corresponding to a time interval between the instant at which the data read operation is started and the instant at which the read data is output from said clock non-synchronous type circuit.

15 10. A circuit according to claim 1, wherein the second control signal determines a timing of transfer of the read data to said clock synchronous type circuit on the basis of the read control signal.

11. A circuit according to claim 1, wherein said
20 clock non-synchronous type circuit has a function of a DRAM which operates asynchronously with the clock signal.

12. A semiconductor integrated circuit comprising:
a clock non-synchronous type circuit for
25 performing data read operation on the basis of a read control signal and outputting read data from a data output node asynchronously with a clock signal;

a clock synchronous type circuit for receiving the read data through a data input node in synchronism with the clock signal;

a selection circuit;

5 first data storage circuits connected in parallel between the data output node and said selection circuit;

a second data storage circuit connected between said selection circuit and the data input node;

10 a first transfer timing determining circuit for selecting one of said first data storage circuits and transferring the read data output from said clock non-synchronous type circuit to said selected one first data storage circuit, said first transfer timing determining circuit transferring the read data on the basis of a first control signal representing that the read data is output from said clock non-synchronous type circuit; and

20 a second transfer timing determining circuit for determining a timing of transfer of the read data stored in said second data storage circuit to said clock synchronous type circuit, said second transfer timing determining circuit transferring the read data on the basis of a second control signal synchronous with the clock signal.

25 13. A circuit according to claim 12, wherein said selection circuit has a function of transferring the

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read data stored in one of said first data storage circuits to said second data storage circuit in accordance with a third control signal generated on the basis of the second control signal.

5 14. A circuit according to claim 13, wherein said selection circuit is a multiplexer.

10 15. A circuit according to claim 12, wherein each of said first data storage circuits and said second data storage circuit comprises a latch circuit having a switching function.

16. A circuit according to claim 12, wherein each of said first data storage circuits and said second data storage circuit comprises a flip-flop circuit.

15 17. A circuit according to claim 12, wherein the first control signal is output from said clock non-synchronous type circuit and asynchronous with the clock signal.

20 18. A circuit according to claim 12, wherein the first control signal is generated on the basis of the read control signal, and is output from said clock non-synchronous type circuit after a lapse of a delay time corresponding to a time interval between the instant at which the data read operation is started and the instant at which the read data is output from said 25 clock non-synchronous type circuit.

19. A circuit according to claim 12, wherein the second control signal determines a timing of transfer

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of the read data to said clock synchronous type circuit on the basis of the read control signal.

20. A circuit according to claim 12, wherein said
clock non-synchronous type circuit has a function of a
DRAM which operates asynchronously with the clock
signal.